

CLAIMS

I claim:

- 1 1. A circuit transferring a charge from a source to a reference potential, said
2 circuit being placed between said source and a circuit to be protected,
3 comprising:
4 a transmission line coupling the source and the circuit to be protected
5 a transistor comprising a base, an emitter, and a collector; and
6 an electrical ground; wherein:
7 the transistor is connected in reverse mode between the electrical ground
8 and the transmission line.
2. The circuit of claim 1, wherein said transistor is an *npn* transistor, the
collector of said transistor is coupled to the electrical ground, the base of said
transistor is coupled to the electrical ground, and the emitter of said transistor is
coupled between the electrical ground and the transmission line.
3. The circuit of claim 1 wherein the circuit to be protected operates at a
frequency greater than 1 GHz.
4. The circuit of claim 1, further comprising a resistor coupled between the
base of said transistor and the electrical ground.
5. The circuit of claim 1, wherein said charge is an electrostatic charge.

6. The circuit of claim 1, wherein said source is coupled to a pad.
7. The circuit of claim 6, wherein said pad is coupled to the lead of a package for an integrated circuit.
8. The circuit of claim 1, wherein said transistor is a *npn*, bipolar junction transistor, the emitter of said transistor is coupled to the electrical ground, the base of said transistor is coupled to the electrical ground, and the collector of said transistor is coupled between the electrical ground and the transmission line.
9. The circuit of claim 1, wherein said transistor turns on at a predetermined voltage, wherein said predetermined voltage is higher than the operating voltage of the circuit to be protected.
10. The circuit of claim 9, wherein said predetermined voltage is 5 volts.
11. The circuit of claim 1, wherein said circuit to be protected operates at a frequency greater than 2 GHz.
12. The circuit of claim 1, wherein said transistor has a breakdown voltage less than the breakdown voltage of the circuit to be protected.
13. A method of protecting a circuit from an electrostatic discharge comprising:

3 providing a bipolar junction transistor; and
4 coupling said transistor between the circuit and a pad coupled to the
5 circuit, wherein,
6 said transistor is configured in reverse mode.

14. The method of claim 13 wherein said transistor is an *npn* transistor.

15. The method of claim 13 wherein said circuit operates at frequencies over
2 GHz.

16. The method of claim 13 wherein said bipolar junction transistor is
configured such that said bipolar junction transistor turns on at a voltage level of
5 volts.

17. The method of claim 13 wherein said bipolar junction transistor comprises
a base, an emitter, and a collector, and said base of said bipolar junction
transistor is coupled to a resistance element.

18. The method of claim 13 wherein said transistor is a *pnp* transistor.

1 19. A circuit transferring a charge from a source to a reference potential, said
2 circuit being placed between said source and a circuit to be protected,
3 comprising:

8 said switching means is connected in reverse mode between the electrical
9 ground and said transmitting means.